MIC-ALM 8 Input Alarm Card
Installation Manual

Bosch Security Systems

EN | Installation and Operation Manual

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MIC-ALM Alarm Card

8 input alarm card for MIC-240PSU, MIC-115PSU, MIC-24PSU, MIC-12PSU Power Supply Units

Installation and Operation Manual

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Safety Precautions

The following symbols are used throughout this manual please pay careful attention to their meaning.

The lightning flash with an arrowhead symbol within a triangle is intended to alert the user to the presence of non-insulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within a triangle is intended to alert the user to the presence of important safety, operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Important Safety Instructions

CAUTION: TO REDUCE THE RISK OF ELECTRICAL SHOCK, DISCONNECT POWER SUPPLY BEFORE OPENING THE POWER SUPPLY UNIT.
POWER DISCONNECT: POWER SUPPLY UNITS HAVE POWER SUPPLIED WHENEVER THE POWER CORD IS INSERTED INTO THE POWER SOURCE

WARNING
INSTALLATION SHOULD BE CARRIED OUT BY QUALIFIED PERSONNEL ONLY IN ACCORDANCE WITH THE APPLICABLE LOCAL CODES.
BOSCH SECURITY SYSTEM ACCEPTS NO LIABILITY FOR ANY DAMAGES OR LOSSES CAUSED DUE TO INCORRECT OR IMPROPER INSTALLATION

1. Read all instructions prior to installation.
2. Keep this manual for future reference.
3. Heed all warnings.
4. Install according to manufacturer's instructions.
5. Qualified persons only should install this product, if in doubt consult a qualified installer.
6. Use correct electrostatic discharge handling procedures when handling printed circuit boards to avoid damage to electro-sensitive components.
7. Do not install near any strong heat sources such as furnaces.
8. Never push objects or pour liquids into the product enclosure as this can cause a fire or electrical shock hazard.
9. Only use electronic cleaning solvent in the unlikely event of the card requiring cleaning.
10. Ensure that the product is correctly earthed.
11. Use only the power sources indicated in this user guide and ensure that the current rating of the supply cable is adequate for the product.
12. Do not overload power supply sockets as this can be a fire or electrical shock hazard.
13. In the event of failure do not attempt to service this product yourself, please contact Bosch Security Systems for assistance.
14. Only use approved attachments or accessories specified by the manufacturer. Any changes or modifications made to the equipment, not expressly approved in writing from Bosch Security Systems, could prevent proper or safe operation of the product and will invalidate the warranty.
15. Please dispose of disused electrical & electronic equipment at an environmentally compatible recycling facility (contact Bosch Security Systems for further details).

This product complies with the following EC directives:-

EMC Directive (89/336/EC as amended)
Machinery Directive (98/37/EC)
LV Directive (73/23/EC)

RoHS (Restriction of Hazardous substances) 2002/95/EC

WEEE (Waste Electrical & Electronic Equipment) 2002/96/EC

This equipment contains electrical or electronic components that must be recycled properly to comply with Directive 2002/96/EC of the European Union regarding the disposal of waste electrical and electronic equipment (WEEE). Contact your local supplier for procedures for recycling this equipment.

Glossary of Terms

PTZ	-	Pan/Tilt/Zoom
PSU	-	Power Supply Unit
IR	-	Infra Red

Reference

The MIC-ALM 8 Input Alarm Card enables MIC400 cameras to support up to 8 external alarms such as Passive IR sensors, tamper switches or other alarm triggers.

The MIC-ALM is designed to plug directly into a non-IR version of MIC400 power supplies and provides volt free contact closures from external sensors, the card can be configured to accept normally closed contacts.

In addition the MIC-ALM also provides for a washer pump driver function designed to enable MIC400 cameras to support third party washer kits to remotely clean the window of the MIC400 camera.

The MIC-ALM provides a volt free contact rated at 240vAC up to 5 Amps to drive the third party washer pump; there are no fuses on the MIC-ALM card so fusing MUST be provided externally.

CHAPTER 1 **Introduction**

Versions

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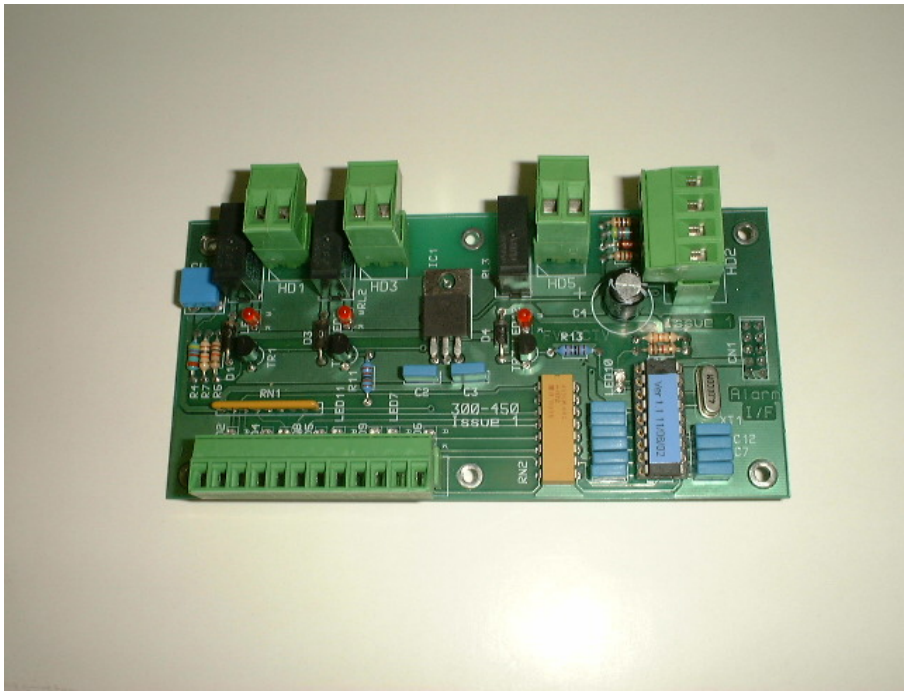
This manual covers the installation and operation of Bosch Security Systems MIC-ALM 8 input Alarm Card for the MIC400 range of PTZ Cameras.

The MIC-ALM 8-Input Alarm Card is a Printed Circuit Board as shown below and plugs directly into Non IR Power Supply Units for the MIC400 PTZ Camera.



This card is only required for MIC400 Power Supply Units which do not support integrated Alarm operations, these are the following MIC400 Power Supply Units:-

MIC-240PSU
MIC-12PSU
MIC-24PSU
MIC-115PSU

The following MIC400 Power Supply Units include 4 –Alarm inputs and a Washer Pump Drive function as standard and are not covered by this manual, please refer to the MIC400 Power Supply Units Installation and Operation Manual instead :-

MIC-IR-240PSU
MIC-IR-12PSU
MIC-IR-24PSU
MIC-IR-115PSU

Features

The MIC-ALM 8 input Alarm Card has the following features:

- 8 external alarm contacts.
- 2 Volt Free alarm output relays
- Volt Free Washer Pump Drive function
- Easy installation into MIC1-400 non IR power supply units

Unpacking

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- Check the exterior of the packaging for visible damage. If any items appear to have been damaged in transit please inform the shipping company.
- Unpack the unit carefully; although ruggedized this is electronic equipment and should be handled with care.
- Do not use if any component appears to be damaged. Please contact Bosch Security Systems in the event of damaged goods.
- The shipping cartoon is the best way to transport the unit, save it & all other packaging materials for future use. If the unit must be returned, use the original packing materials.

CAUTION: Use proper ESD handling precautions to avoid electrostatic discharge. Wear a grounded wrist strap to prevent damage when handling electro-sensitive printed circuit boards.

Packaging Contents

Please check for the following contents

- MIC-ALM 8 input Alarm Card Installation Manual (this Booklet)
- MIC-ALM 8 Input Alarm Card

CHAPTER 2 MIC-ALM 8 Input Alarm Card Functionality

The MIC-ALM 8 Input Alarm Card provides 8 contacts which enable up to 8 external alarms to be connected to the MIC400 camera. The MIC-ALM Card also provides support for third party washer pumps and reservoirs and two (2) auxiliary output relays each rated at 240vAC up to 5 Amps.

The washer function provides a volt free contact output rated at 240vAC at 5 Amps, wiring for this supply must be provided by the installer and it is recommended that this supply is externally fused. A push to test button (SW1) is also provided to test the pump operation and expel air to prime the pump ready for operation.

The drive signal *Washer Dr* is a TTL signal generated by the MIC400 camera, this TTL signal causes the relay drive transistor to switch on thus energizing the relay and closing the relay contacts thereby activating the supply to the washer pump.

To facilitate the installation of third party Washer Pumps & Reservoirs a washer nozzle kit (MIC-WKT-IR kit) is available from Bosch Security Systems. Along with the MIC-WKT-IR kit, the MIC-ALM Card provides the required accessories to fit a third party washer pump and reservoir to a MIC400 camera.

The MIC-WKT-IR kit consists of a 5mm twin jet washer nozzle and two (2) brackets to allow mounting of the washer nozzle on to a MIC400 camera base or corner mount bracket (CMB) utilising the M8 x 20mm fixing bolts holding the camera base or between wall and corner mount brackets.

The washer pump, reservoir bottle & 5mm tubing are not supplied by Bosch Security Systems and will need to be purchased separately to suit the particular installation.

MIC-ALM 8 Input Alarm Card Installation

CAUTION: Electrical Danger: Ensure all power is disconnected before opening or working upon the MIC400 Power Supply Unit.
Installation must be carried out by suitably qualified persons & all local safety regulations should be followed.

1. The power supply unit should be switched off and unplugged prior to carrying out any work.

2. Ensure that the four (4) card spacer supports fitted in the power supply are positioned in the left and right most mounting holes on the power supply printed circuit board, so that the MIC-ALM card is supported in each corner.

3. Should you need to reposition the card spacers first remove the four (4) screws holding the power supply PCB to the enclosure, turn the PCB over and remove the two (2) card spacer supports, these spacers should be re-fixed at the correct positions shown as A and B on Figure 1 below.

4. Insert the MIC-ALM Card so that the connector labelled CN1 as shown on Figure 2 below plugs into the CN1 header on the Power Supply labelled C on Figure 1. Then fix to the card spacer supports using M3x6 screws.

5. The MIC-ALM is now ready to accept third party external alarm and washer pump electrical connections. Please see **Alarms Connections** and **Washer Pump Installation** for more details.

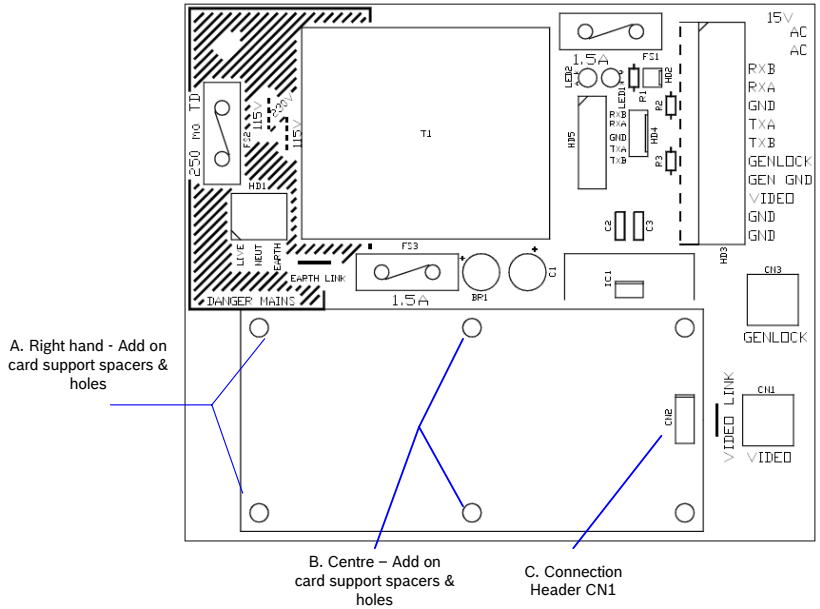

Figure 2 - MIC-ALM 8 Input Alarm Card PCB Layout

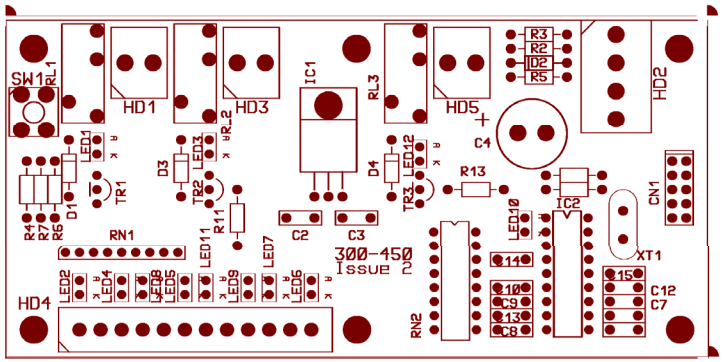

Figure 1:- MIC400 non-IR Power Supply PCB Layout

Alarm Connections

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CAUTION: Electrical Danger: Ensure all power is disconnected before opening or working upon the MIC400 Power Supply Unit.
Installation must be carried out by suitably qualified persons & all local safety regulations should be followed.

To connect third party external alarm contacts please do the following:-

1. Open the PSU lid and locate the alarm header HD4 located at the lower left hand side of the MIC-ALM card. Feed the alarm wires through one of the weather proof gland leaving sufficient slack to reach the terminal block HD4.

2. Wire the alarms into HD4 as shown in the table below:-

HD4	Alarm Inputs
1	Alarm 1
2	0v
3	Alarm 2
4	Alarm 3
5	0v
6	Alarm 4
7	Alarm 5
8	0v
9	Alarm 6
10	Alarm 7
11	0v
12	Alarm 8

3. For external outputs connect to the auxiliary contacts HD3 or HD5 respectively as shown below:-

HD3	Alarm Output 1
1	Relay contact 1
2	Relay contact 2

HD5	Alarm Output 2
1	Relay contact 1
2	Relay contact 2

4. The auxiliary contacts at HD3 and HD5 are rated to 240vAC at 5 Amps these are not fused on the card so must be externally fused by the installer to suit the current draw to be expected by any third party equipment.
5. The auxiliary outputs HD3 and HD5 are currently configured to close as follows:-

HD3 any of alarms 1 to 4 active
HD5 any of alarms 5 to 8 active

6. Each alarm contact has an LED next to it which will not be lit whenever an alarm is received for that contact, in addition there are LED's for the Washer Drive (HD1) and the two (2) Auxiliaries, HD3 and HD5 which will be lit when the respective relay contact is closed.

Configuring the Alarms through Camset

Configuring the MIC-ALM 8 input alarm card is currently achieved through Camset, Bosch Security Systems freeware PC-based software.

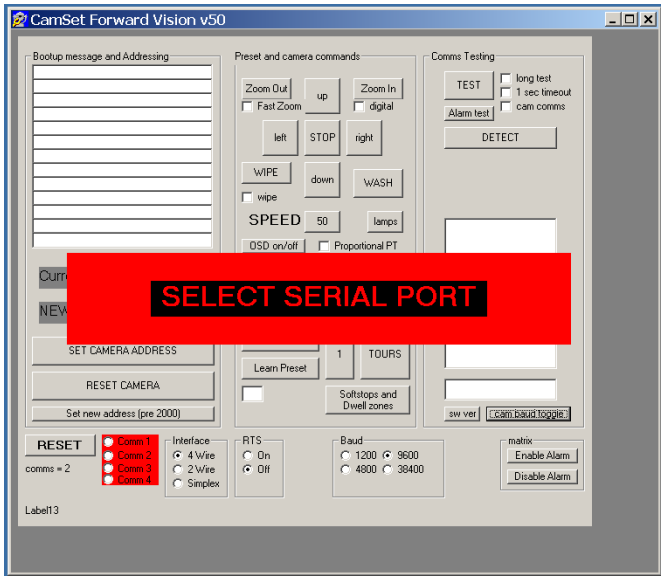
Camset is a freeware program which allows the MIC400 range to be setup and configured through a serial port on a PC, using a RS232-RS422/RS485 adapter such as Greenwich instruments GW232 which is available from all good electrical suppliers.

There is a different Camset for each respective protocol, so ensure you have the correct one for your camera.

Loading Camset

To access the Camset software please do the following:-

1. Install the Camset software as per the software installation instructions then open the Camset program, you should see a screen such as this:-



2. First the correct Serial port must be selected in the lower left hand corner of the screen using the mouse pointer. For a notebook this can only generally be “Comm 1”. Alternatively for notebooks without a serial Comm port, a USB to RS232 adaptor can be used in which case the Comm port selected must be that mapped by windows for the USB to RS232 port (usually Comm3 or Comm4).

3. Once selected the programme is ready to receive messages from the camera,if this fails to work check all connections, check the correct version of Camset is being used for the protocol loaded on the camera and then RESET CAMERA.

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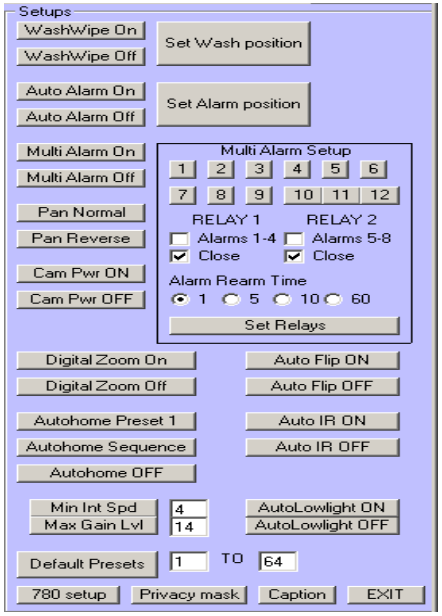
4. RESET CAMERA should put a start up message in the thirteen text box windows in the top left of the programme panel (Boot up message and addressing). The address of the camera detected during boot up will be automatically loaded into the Current Address: box

5. When the camera is responding select the SETUPS button to enter the Setup section.

Using the Setups Button

When the **Setups** button is selected the sub window shown below is opened. This provides access to the alarms setup functions which are detailed below:-



WashWipe On/Off.
If selected to On, a wash preset position can be learned by pointing the camera at the washer nozzle and setting Wash position. When the Wash button is pressed the camera remembers its current position, moves to the washer nozzle position and starts the washer and wiper. Whilst the washer button remains depressed, the washer and wiper continue to run. On release of the wash button the washer stops and the camera returns to its previous view. After a further two wipes the wiper stops too.

Auto Alarm On/Off.
Operates as per the WashWipe On/Off, On all MIC400's a single tamper switch input is supported. With Auto Alarm selected on and an alarm position learned, the camera will move to the alarm position when the tamper switch is operated. If the Auto Alarm is selected to off, the camera still reports the status of the alarm bit to the control system but the camera does nothing else in response to the tamper switch input.

Multi Alarm On/Off.
The Multi Alarm facility is used in conjunction with the Multi Alarm Setup window and can only be used if the MIC-ALM 8 input alarm card is fitted to the power supply box or if the Power Supply Unit is an IR version which has integrated alarms and washer function. If the MIC-ALM is not fitted the camera must be set to **Multi Alarm off** to prevent inconsistent operation of the camera.

The numeric buttons 1 to 12 allow for the learning of alarm presets positions for each of the alarm channels, normally 1 to 8 but 9 to 12 have been included for future designs. To make the camera go to these presets when the alarm is activated, both the **Auto Alarm On** and **Multi Alarm On** must be selected. The MIC-ALM Card fitted in the power supply has on it two relays for alarm status output HD3 and HD5, along with a relay to drive a washer pump HD1 as shown on figure 2. The alarm board is enabled by setting the 'multi alarm' mode on when active the alarm board LED 10 should start flashing.

The relay operation is controlled as follows:

RELAY 1	RELAY 2					

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	□	Any alarm activates relay	√	Only alarms shown activate relay
	□	Relay closes on alarm	√	Relay opens on alarm

The relay alarm rearm time is controlled by the four radio buttons. Times shown are in seconds.

Once the relay operation has been defined as above the **Set Relays** box must be selected to load the relay status into the MIC400 camera.

CHAPTER 3 Washer Pump Drive Function

The MIC-ALM 8 Input Alarm Card is also capable of supporting third party washer pumps and reservoirs. The washer function provides a volt free contact output rated at 240VAC at 5 Amps, wiring for this supply must be provided by the installer and it is recommended that this supply is externally fused. A push to test button (SW1) is also provided to test the pump operation and expel air to prime the pump ready for operation.

The washer pump, reservoir bottle & 5mm tubing are not supplied by Bosch Security Systems and will need to be purchased separately to suit the particular installation.

Washer Pump Installation

CAUTION: Electrical Danger: Ensure all power is disconnected before opening or working upon the MIC400 Power Supply Unit. Installation must be carried out by suitably qualified persons & all local safety regulations should be followed.

WARNING: The MIC-ALM has no fuses built in.
Fusing to the appropriate level MUST be fitted externally. Nominally this would be 2.5A for 240V and 5A for 24V pumps.
Bosch Security Systems accepts no liability for damage or injury caused by incorrect fuse installation.

To connect a third party washer pump please do the following:-

1. Fit the washer nozzle to the appropriate bracket (wall or corner mount) and then fix the washer nozzle bracket to the wall or corner bracket using one of the M8 fixing bolts, ensure the washer nozzle points towards the camera.

2. Fit the washer pump and reservoir in a suitable location taking all necessary safety precautions, observing the manufacturers instructions and all applicable local building codes.

3. Connect the 5mm tubing from the pump to the washer nozzle.

4. Ensure the MIC400 Power Supply Unit is completely disconnected from the power source.

5. Open the PSU lid and locate the washer pump drive header HD1 at the upper left hand side of the MIC-ALM (see figure 2).

6. Feed the washer pump drive power cable through the one of the weatherproof glands, leave sufficient slack to connect to the HD1 terminal then tighten the gland.

7. Connect the washer pump drive power cable to the MIC-ALM using the HD1 terminal, the connections required are shown below:-

HD1	Washer Drive
1	Relay contact 1
2	Relay contact 2

8. Secure all external pipe work and cabling, fill the reservoir.

9. Press the push to test button (SW1) to test the pump operation, hold button SW1 down to expel the air from the tubing & prime the pump for operation.

10. When the pump is primed, re-seal the MIC400 PSU.

11. Point the MIC400 at the wash nozzle and set the wash wipe position via Camset Setup page.

MIC-ALM 8 Input Alarm Card Dimensions:-
125 mm (W) x 25mm (H) x 60mm (D)

Contact

CHAPTER 4 **Technical Specifications**

Americas
Bosch Security Systems Inc
850 Greenfield Road
Lancaster
Pennsylvania 17601
USA
Telephone +1 888-289-0096
Fax +1 585-223-9180
Email: security.sales@us.bosch.com
www.boschsecurity.us

Europe, Middle East, Africa
Bosch Security Systems B.V
P.O Box 80002
5600 JB Eindhoven
The Netherlands
Phone +31 40 2577 284
Fax +31 40 2577 330
emea.securitysystems@bosch.com
www.boschsecurity.com

Asia-Pacific
Bosch Security Systems Pte Ltd
38C Jalan Pemimpin
Singapore 577180
Phone +65 6319 3450
Fax +65 6319 3499
apr.securitysystems@bosch.com
www.boschsecurity.com

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